

WHAT IS CLAIMED IS:

- 1) An operating knob for an optical system comprises: a first and a second coaxially arranged rotating element, wherein the first and the second rotating element are independently rotatable, the first rotating element rests against the optical system, the second rotating element is arranged downstream of the first rotating element, the first and the second rotating element have at least partly conical form, and that the first rotating element has one side directly opposing the second rotating element and has a larger diameter than the second rotating element and a step is formed at the side of the second rotating element directly opposing the first rotating element, wherein the step possesses a diameter which is approximately the diameter of the first rotating element.
- 2) The operating knob as defined in claim 1 wherein the optical system is a microscope.
- 3) The operating knob as defined in claim 1 wherein both the first and the second rotating element exhibit on a circumferential surface a profile in the form of grooves, notches or ribs.
- 4) The operating knob as defined in claim 1 wherein both the first and the second rotating element exhibit on a circumferential surface a rubber inlay.
- 5) The operating knob as defined in claim 1 wherein both the first and the second rotating element have a partly conical body and each body has a cylindrical step at its wider part.
- 6) The operating knob as defined in claim 5 wherein the conical body of the first and the second rotating element exhibits an angle of  $5^{\circ}$  to  $10^{\circ}$  with respect to a rotating axis of the operating knob.

- 7) The operating knob as defined in claim 6 wherein the angle exhibits  $7^\circ$ .
- 8) The operating knob as defined in claim 1, wherein the first conical rotating element has a maximum diameter ( $D_1$ ) close to the optical system from 57.0 to 63.0 mm, and a diameter ( $D_2$ ) close to the second conical rotating element from 51.5 to 56.5 mm and wherein the second conical rotating element has a maximum diameter ( $D_3$ ) close to the first conical rotating element from 34.0 to 38.0 mm and close to a front end from 29.3 to 33.3 mm.
- 9) The operating knob as defined in claim 8, wherein the first conical rotating element has a maximum diameter ( $D_1$ ) close to the optical system of 60.0 mm, and a diameter ( $D_2$ ) close to the second conical rotating element of 54.5 mm and wherein the second conical rotating element has a maximum diameter ( $D_3$ ) close to the first conical rotating element of 36.0 mm and close to the front end of 31.3 mm.
- 10) The operating knob as defined in claim 8, wherein the first rotating element and the second rotating element have a conical body, which is followed by a cylindrical step at the end with the maximum diameter.
- 11) The operating knob as defined in claim 10, wherein the cylindrical step has a width of 9 mm.
- 12) The operating knob as defined in claim 1, wherein a separating groove is formed by the step between the first and the second rotating element.
- 13) The operating knob as defined in claim 12, wherein a cone shaped depression is formed in the direction to the axis of the first rotating element, wherein the step of the second rotating element has a cone shaped mount, and wherein the cone shaped depression and the cone

shaped mount are attached to each other such that the separating groove between the first and the second rotating element is formed exactly at the end of the envelope surface of the first rotating element.

14) The operating knob as defined in claim 1, wherein the first and the second rotating element  
5 is made from an injection moulded polymer.

15) The operating knob as defined in 1, wherein the first and the second rotating element is made from a fine machined stainless steel.

16) A microscope comprising: a first and a second coaxially arranged rotating element, wherein the first and the second rotating element are independently rotatable, the first rotating element rests against the optical system, the second rotating element is arranged downstream  
10 of the first rotating element, the first and the second rotating element have at least partly conical form, and that the first rotating element has one side directly opposing the second rotating element and has a larger diameter than the second rotating element and a step is formed at the side of the second rotating element directly opposing the first rotating element,  
15 wherein the step possesses a diameter which is approximately the diameter of the first rotating element.

17) The microscope as defined in claim 1 wherein both the first and the second rotating element exhibit on a circumferential surface a profile in the form of grooves, notches or ribs.